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**KEY WORDS :** Vocal cord paralysis · Augmentation · Autologous fascia injection · Acoustical analysis.

962

**Table 1.** Profiles of the nine patients with autologous fascia injection

No	Sex	Age	Diagnosis	Etiology	Duration of disease	Duration of F/U
1	M	11	Vocal cord palsy (L)	Surgery	4 mon	3 mon
2	M	26	Vocal cord palsy (L)	Surgery	20 yr	4 mon
3	F	40	Vocal cord palsy (L)	Surgery	2 yr	5 mon
4	M	25	Vocal cord palsy (R)	Trauma	5 yr	2.5 mon
5	M	27	Vocal cord palsy (L)	Idiopathic	3 yr	4 mon
6	F	24	Vocal cord palsy (L)	Pulmonary tbc	18 mon	4.5 mon
7	M	32	Sulcus vocalis			5 mon
8	M	30	Sulcus vocalis			5 mon
9	F	34	Sulcus vocalis			4 mon

(Figs. 3, 4 and 5).

, 20%

가

가

가

2000 11 2001 2

2

9

11

(MPT)

40

27

6

(EEG)

3

가 6 (No. 1 6),

(Table 2).

가 3 (No. 7 9)

AKGD 3305 Microphone Onkyo TA - W88 Tape machine

4

1

1

Rigid telaryngoscope(Storz, Germany) Rhino - larynx Stroboscope(B & K Type 4919)

Kay Laryngograph

Analog signal A/D board(DT2821)

CSpeech Version 3.1

가

, jitter, shimmer,

(Signal

3 × 2 cm

to Noise ratio)

2 g

가

2 4

2

#15 blade

(Fig. 1),

human insulin(Humulin) 100 U/ml

5

. Karl

Wilcoxon

Storz syringe (cartridge)

signed rank test

(SPSS 9.00)

가

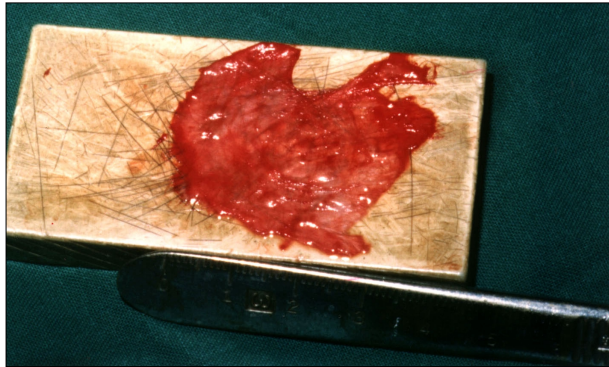
(Fig. 2) 18 gauze

95%

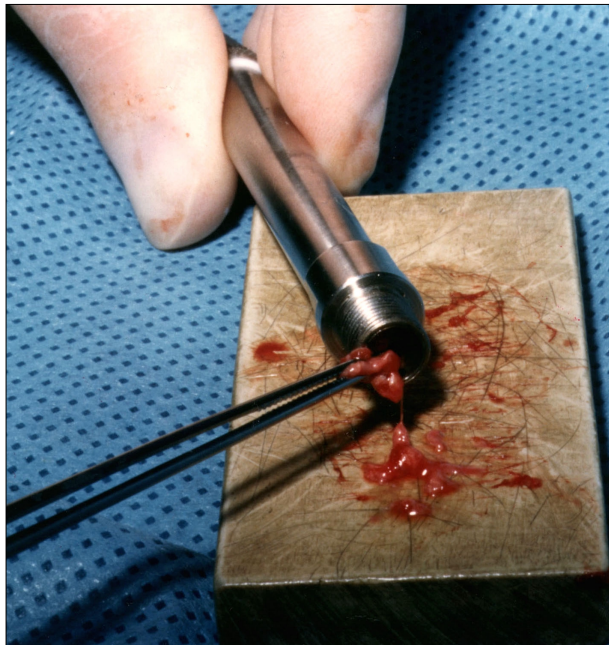
dead space

(click)

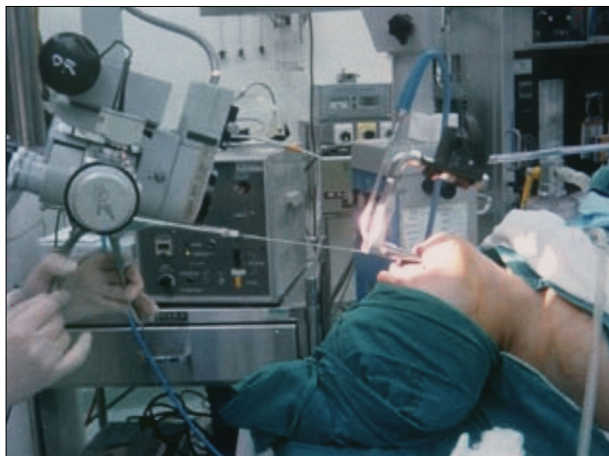
가



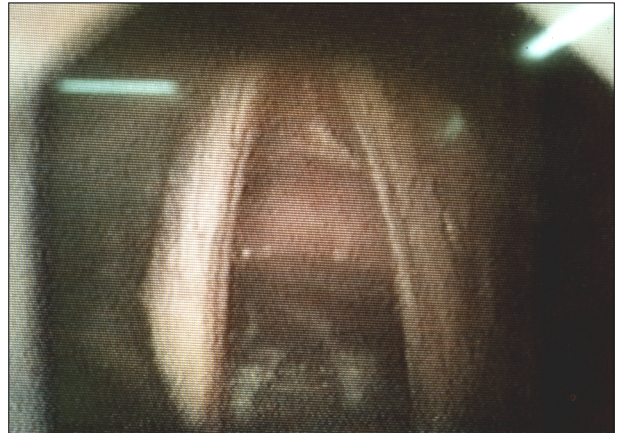
**Fig. 1.** The temporalis muscle fascia was obtained (3 × 2 cm).



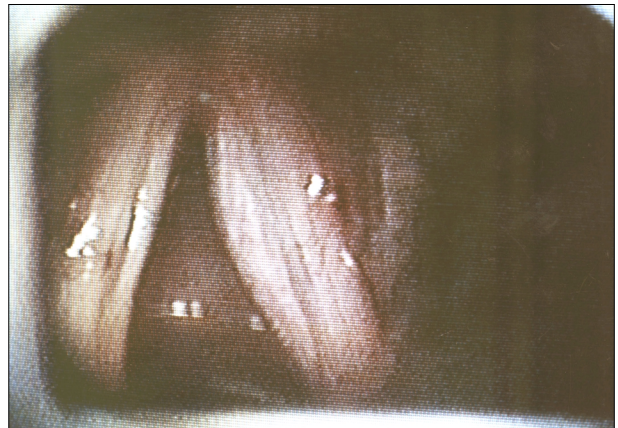
**Fig. 2.** The fascia was chopped into small pieces and put into the cartridge of the pressure syringe (Karl Storz syringe).



**Fig. 3.** The injection of fascia was done under the laryngomicroscopic methods using a pressure syringe with a 18-gauge needle.



**Fig. 4.** Preoperative vocal fold bowing of the sulcus vocalis patient.



**Fig. 5.** Right true vocal cord was augmented by fascia injection.

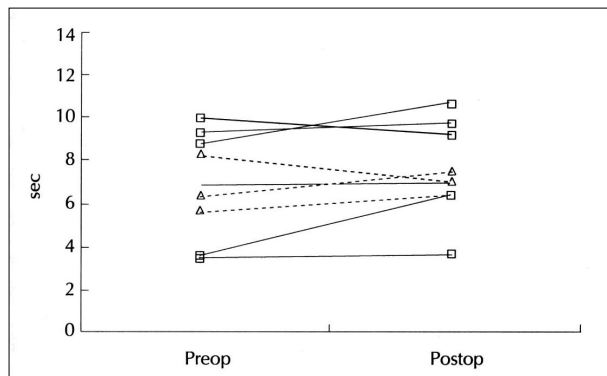
6.95 ± 1.2 , 7.76 ± 1.1  
(p = 0.173) (Fig. 6). Jitter 0.059 ± 0.022 msec 0.028 ± 0.011 msec  
, shimmer 3.60 ± 1.56% 2.45 ± 1.32%  
(p = 0.028, <0.05).  
가 17.93 ± 1.81 dB 23.35 ± 1.26 dB  
(p = 0.028, <0.05) (Fig. 7).

(Fig. 8). 1 (No. 8)  
(Fig. 9),

**Table 2.** The preoperative and postoperative acoustic parameters of the groups of vocal cord palsy and sulcus vocalis

	MPT		Jitter		Shimmer		S/N ratio	
	Preop.	Postop.	Preop.	Postop.	Preop.	Postop.	Preop.	Postop.
1	3.35	3.55	0.024	0.018	1.31	1.2	19.1	19.8
2	9.27	9.9	0.049	0.025	1.95	0.8	19.8	22.0
3*	10.0	9.19	0.164	0.08	11.17	9.0	13.8	26.2
4	6.78	6.84	0.036	0.018	2.52	1.5	15.4	22.1
5	8.79	10.77	0.02	0.01	1.07	0.53	25.4	28.1
6	3.5	6.33	0.066	0.017	3.6	1.66	14.1	21.9
	p = 0.173		p = 0.028 <sup>‡</sup>		p = 0.028 <sup>‡</sup>		p = 0.028 <sup>‡</sup>	
7	1.34	5.54	0.022	0.02	1.78	1.34	23.5	26.4
8 <sup>†</sup>	8.33	6.85	0.125	0.098	20.13	9.39	8.5	5.3
9	6.30	7.21	0.013	0.021	1.19	1.61	22.0	17.9
	p = 0.593		p = 0.593		p = 0.285		p = 0.285	

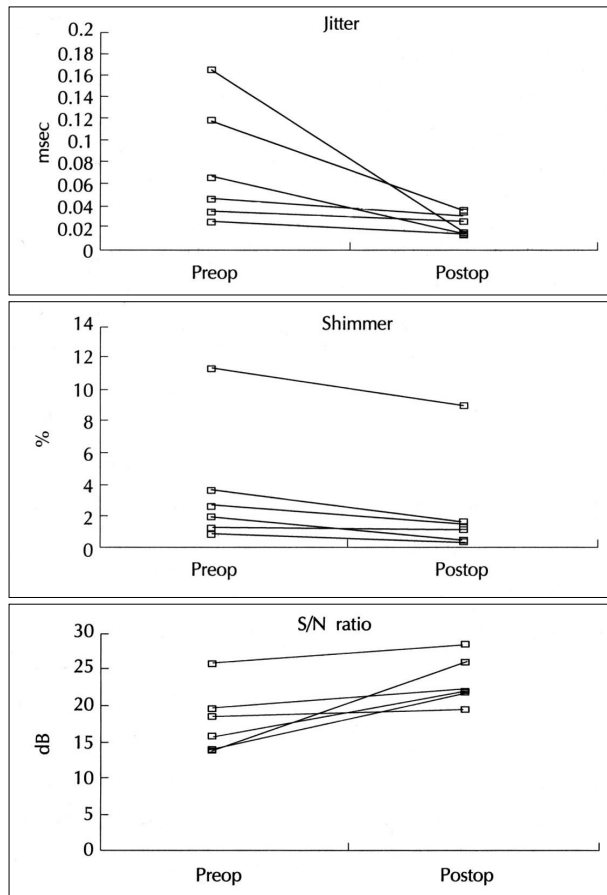
MPT : Maximum phonation time, S/N ratio : Signal to noise ratio, Unit : MPT (sec), jitter (msec), shimmer (%), S/N ratio (dB),  
 \* : Large posterior chink, † : Postop. granuloma, ‡ : Statically significant



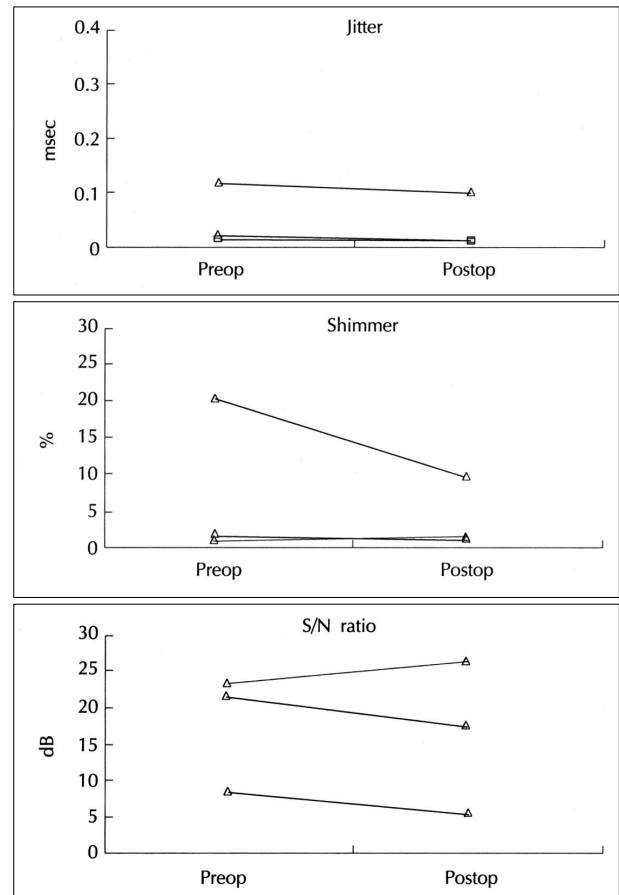
**Fig. 6.** Changes of MPT (maximum phonation time) dark line : cord paralyzed group, dot line : sulcus vocalis group.

Paraffin Teflon  
 Gelfoam 8 10  
 4) Collagen 3 5 가  
 가 5) 가 6 12  
 가 16) 가 17)  
 가 가 가 8)  
 가 9) 가 10)  
 paraffin, 2) 1998 Rihkanen 11)  
 Teflon, 3) Gelfoam, 4) collagen, 5) fat 1) (fascia lata) 가  
 14)15)  
 가 12)13)  
 가

가



**Fig. 7.** Changes of the vocal acoustics in the group of vocal cord palsy.



**Fig. 8.** Changes of the vocal acoustics in the group of sulcus vocalis.

가

sy -

ringe dead space

가

18)

16)

19)

human insulin(Humulin)

100 U/ml 5

가



**Fig. 9.** A postoperative complication (granuloma) was seen (No. 7, POD 2 months).

가

Karl Storz syringe

0.05 cc, 0.1 cc

가

Reinke

가

가

jitter, shimmer, signal to noise ratio

가

(MPT)

6 jitter, shimmer, noise

to signal ratio, maximum phonation time 가

jitter, shimmer, noise to signal ratio

1 (No. 3)

1 (No. 8)

가

1

6

12

2

가

가

가

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